



Center for Fundamentals of Subsurface Flow

THIRD CFSF WORKSHOP ON POROUS MEDIA FLOWS

May 8-10, 2012
Hilton Garden Inn
Laramie, Wyoming

Tuesday, May, 8

- 12:00pm Working Lunch (Garden Ballroom, Hilton Garden Inn)
- 12:20pm – 12:30pm Opening Remarks (Garden Ballroom, Hilton Garden Inn)
- 12:30pm – 1:15pm **Special Presentation: Hydro-geochemical modeling of CO₂ sequestration including mineral dissolution effects**
Speaker: Prof. Sidarta Araujo de Lima, Federal University of Rio Grande do Norte, Brazil
- 1:30pm – 2:30pm **Session on Pore Scale Modeling**
- 1:30pm – 2:00pm **Direct pore-level modeling of flow and transport in naturally-occurring porous media**
CFSF PI: M. Piri, Speaker: Dr. Saeed Ovaysi
- 2:00pm – 2:30pm **Pore-scale modeling of three-phase flow in random mixed-wet porous media**
CFSF PI: M. Piri, Speaker: Arsalan Zolfaghari Shahrak
- 2:30pm – 3:00pm **Session on Experimental Science: Validation of a Novel Apparatus for Interfacial Tension and Contact Angle Measurements at HPHT conditions**
CFSF PI: Lamia Goual; Speaker: Soheil Saraji
- 3:00pm – 3:30pm **Coffee Break**
- 3:30pm – 5:30pm **Short Course: Introduction to computational reservoir geomechanics**
Speaker: Prof. Marcio Murad, LNCC, Brazil

Wednesday, May 9

- 10:00am – 12:00pm **Short Course: Up-scaling and flow in heterogeneous and fractured media**

Speaker: Prof. Benoit Noetinger, IFP Energies nouvelles, France

- 12:00pm Working Lunch
- 12:30pm – 1:15pm **Special Presentation: A semi-discrete central scheme for scalar hyperbolic conservation laws with heterogeneous storage coefficient and its application to porous media flow**
Speaker: Prof. Maicon R. Correa, UNICAMP, Brazil
- 1:30pm – 2:30pm **Session on Reservoir Geomechanics**
- 1:30pm – 2:00pm **On the development of the UW-team simulator for compositional flows**
CFSF PI: F. Pereira, Speaker: Dr. Marcos Mendes
- 2:00pm – 2:30pm **Micro-scale coupled modeling of geomechanics and multiphase fluid flow and its applications**
Speaker: Samin Raziperchikolaee
- 2:30 pm – 3:00 pm **Session on Numerical Analysis: Conservative Flux from Galerkin FEM by Simple Post Processing**
CFSF PI: V. Ginting; Speaker: Larry Bush
- 3:00pm – 3:30pm **Coffee Break**
- 3:30pm – 5:30pm **Short Course: Introduction to computational reservoir geomechanics**
Speaker: Prof. Marcio Murad, LNCC, Brazil
- 6:00 pm - 8:00 pm **Workshop Dinner** (Salon F, Hilton Garden Inn)

Thursday, May, 10

- 10:00am – 12:00pm **Short Course: Up-scaling and flow in heterogeneous and fractured media**
Speaker: Prof. Benoit Noetinger, IFP Energies nouvelles, France
- 12:00pm Working Lunch
- 12:30pm – 1:15pm **Special Presentation: Quantification of uncertainty in permeability of reservoir models using the LABTRAN-GEO method**
Speaker: Prof. Marcio Borges, LNCC, Brazil
- 1:30pm – 2:30pm **Session on Flows in Fractured Formations**
- 1:30pm – 2:00pm **Homogenization of a model for CO₂ sequestration in saline aquifers**
Speaker: Dr. Celestin Zemtsov

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| 2:00pm – 2:30pm | Overview of the UW-team compositional simulator with a two-phase flow fractured reservoir example Speaker: John Spittler |
| 2:30pm – 5:30pm | Session on Multiscale Methods and Uncertainty Quantification |
| 2:30pm – 3:00pm | Uncertainty analysis of carbon sequestration in an inclined deep saline aquifer CFSF PI: Ye Zhang; Speaker: Guang Yang |
| 3:00pm – 3:30pm | Coffee Break |
| 3:30pm – 4:00pm | A new direct method of parameter estimation for steady state flow in heterogeneous aquifers with unknown boundary condition CFSF PI: Ye Zhang; Speaker: Juraj Irsa |
| 4:00pm – 4:30pm | Design and implementation of a multiscale mixed method for two-phase flows CFSF PI: F. Pereira; Speaker: Joyce Rigelo |
| 4:30pm – 5:00pm | Multi-stage, multi-physics Markov chain Monte Carlo methods for prediction in subsurface flows CFSF PI: V. Ginting; Speaker: Dr. Arunasalam Rahunanthan |
| 5:00pm – 5:30pm | A multiscale filtering technique for characterization of fractured media Speaker: Dr. Michael Presho |
| 5:30 pm | Concluding remarks |